1.10 GEOMETRY ON THE PLANE (5)- ARC, SECTOR, ANGLES IN A CIRCLE - EXERCISES

Section A

1. In Figure 19.11, ADB is an arc of a circle with centre O, if $\angle ACB = 35°$, find $\angle AOB$.
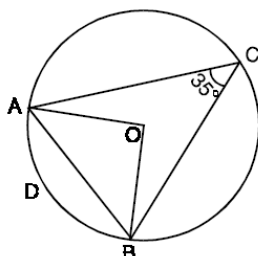

Fig. 19.11

2. In Figure 19.12, AOB is a diameter of a circle with centre O. Is $\angle APB = \angle AQB = 90°$? Give reasons.
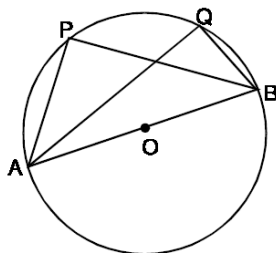

Fig. 19.12

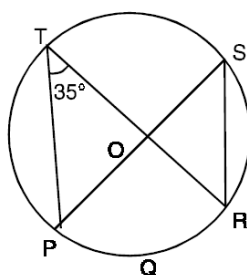**3.** In Figure 19.13, PQR is an arc of a circle with centre O. If $\angle PTR = 35°$, find $\angle PSR$.

Fig. 19.13

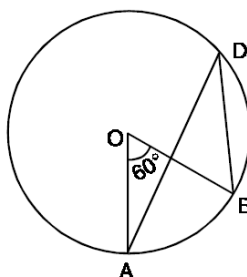**4.** In Figure 19.14, O is the centre of a circle and $\angle AOB = 60°$. Find $\angle ADB$.

Fig. 19.14

Section B

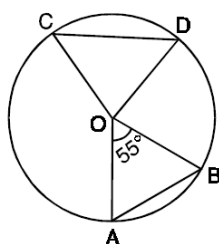**1.** In Figure 19.26, AB and CD are two equal chords of a circle with centre O. If ∠AOB = 55°, find ∠COD.

Fig. 19.26

2. In Figure 19.27, PQRS is a cyclic quadrilateral, and the side PS is extended to the point A. If ∠PQR = 80°, find ∠ASR.
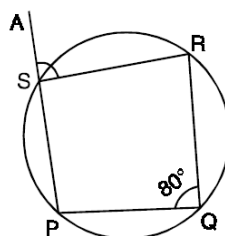

Fig. 19.27

3. In Figure 19.28, ABCD is a cyclic quadrilateral whose diagonals intersect at O. If ∠ACB = 50° and ∠ABC = 110°, find ∠BDC.
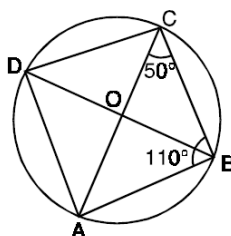

Fig. 19.28

4. In Figure 19.29, ABCD is a quadrilateral. If ∠A = ∠BCE, is the quadrilateral a cyclic quadrilateral ? Give reasons.
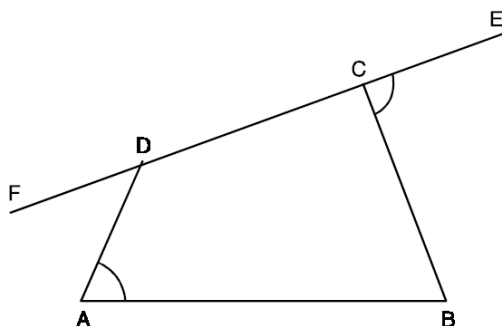

Fig. 19.29

Section C

1. A square PQRS is inscribed in a circle with centre O. What angle does each side subtend at the centre O ?

2. In Figure 19.30, C_1 and C_2 are two circles with centre O_1 and O_2 and intersect each other at points A and B. If O_1O_2 intersect AB at M then show that

   (i) $\Delta O_1AO_2 \cong \Delta O_1BO_2$

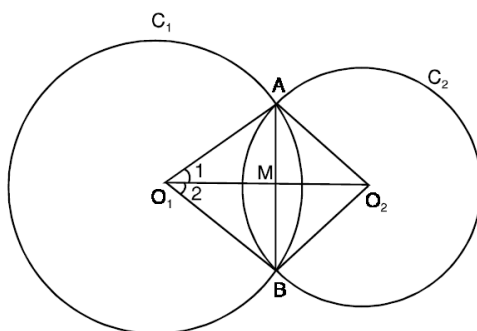   (ii) M is the mid point of AB

   (iii) $AB \perp O_1O_2$

Fig. 19.30

3. Two circle intersect in A and B. AC and AD are the diameters of the circles. Prove that C, B and D are collinear.
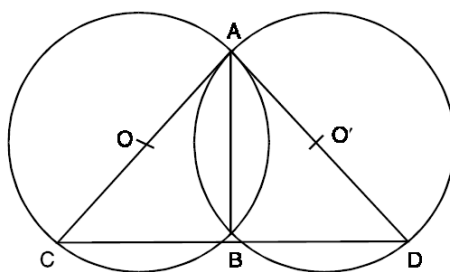

Fig. 19.31

[**Hint.** Join CB, BD and AB, Since $\angle ABC = 90°$ and $\angle ABD = 90°$]

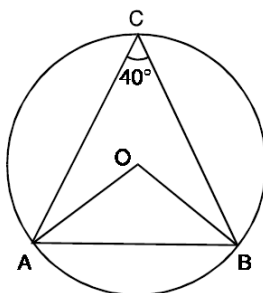4. In Figure 19.32, AB is a chord of a circle with centre O. If $\angle ACB = 40°$, find $\angle OAB$.

Fig. 19.32

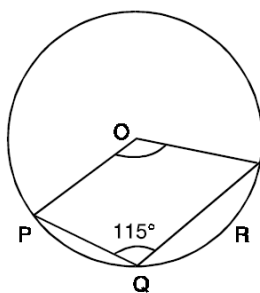**5.** In Figure 19.33, O is the centre of a circle and ∠PQR = 115°. Find ∠POR.

Fig. 19.33

6. In Figure 19.34, O is the centre of a circle, ∠AOB = 80° and ∠PQB = 70°. Find ∠PBQ.

Fig. 19.34